DCMA Providing Insight, Support to Army "Shadow" TUAV Program

First DoD UAV Program to Progress into Production Acquisition Stage

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The Defense Contract Management Agency is an independent combat support agency within the Department of Defense. As the Department's contract manager, DCMA is responsible for ensuring federal acquisition programs, supplies, and services are delivered on time, within cost, and meet performance requirements.

The first in a new generation of UAVs, the compact "Shadow™ TUAV system provides U.S. Army brigade commanders with crucial intelligence—delivered efficiently from its electronic payload directly to tactical command centers. From left: The Shadow Tactical UAV Team—Joyce Mason, DCMA Maryland PI; Linda Scott, AAI Corp. PM; Tim Owings, TUAV Project Office, Assistant Program Manager (APM) Brigade; Mike Padden, TUAV Project Office, Chief Acquisition; Steve Reid, AAI Corp. UAV Director; Ron Smith, TUAV Project Office Logistics; and Charles Johnson, U.S. Army Aviation and Missile Command Procurement Contracting Officer.

The Department of Defense is undergoing a transformation, focused on new methods of managing acquisition programs with fewer resources. Will service provided by the Defense Contract Management Agency (DCMA) to the customer be compromised? Not in the least!

This article will demonstrate DCMA's experiences on the Tactical Unmanned Aerial Vehicle (TUAV) program. Specifically, we'll discuss the new acquisition philosophies from a DCMA perspective, and identify promising practices we discovered during our transformation process that demonstrate our effectiveness in continuing to provide world-class support that enables warfighters to fight and win.

Shadow 200 UAV

On Dec. 27, 2002, the Army awarded AAI Corp. a contract to provide four Low-Rate Initial Production (LRIP) Tactical Unmanned Aerial Vehicle (TUAV) systems for the Shadow 200 UAV after completion of a rigorous Systems Capabilities Demonstration (SCD). The mission: to provide the Army field commander with a capability for "over the horizon" tactical reconnaissance. The acquisition strategy included the selection of proven off-the-shelf technology that could be matured through block enhancements to meet specific tactical objectives. AAI had previously established a core competency in this technology in the mid-1980s with the Pioneer UAV program.

Program Support Team

Once the contract was in place, DCMA mobilized the necessary resources for the Shadow 200 UAV effort and established a multifunctional Program Support Team (PST). This DCMA team of professionals serves as the eyes and ears

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Photo by Anthony Fiaschetti

for military program offices and buying commands, providing support for contracting, production, quality, government property, safety, engineering, and software functional disciplines. Orchestrating the effort was a Program Integrator (PI), who served as the primary conduit for communication between the supplier, the project office, and DCMA teams. The DCMA team also met with the supplier to discuss the initial program technical, cost, and schedule risks, and to ensure compliance with contract terms and conditions once the contract was awarded.

In-Plant Presence

DCMA provides the customer an industry-wide perspective as a result of its presence across the defense industry spectrum. Indeed, one of DCMA's greatest benefits is its in-plant presence. The in-plant DCMA Quality Assurance Representative (QAR), teaming with the contractor's Quality Engineer, concurrently reviewed the risks associated with completed drawings, procurement requisitions, and manufacturing instructions as they became available. In addition to improved efficiency in releasing orders to manufacturing, the review provided an early opportunity for the QAR to select key verification points in-plant as well as at key supplier locations to mitigate identified risks.

Major subcontract purchases were also reviewed for cost, schedule, and technical risks. Where significant risks existed, delegations for contract administration actions were formulated and coordinated with sister DCMA offices to provide the necessary level of oversight. Support Contract Administration Delegations were issued to nine DCMA sister organizations to help mitigate risks associated with the Shadow 200 UAV systems or components.

Communications Network

A communications network was established with the PI and the local and extended DCMA staff. Daily communications provided a proactive environment to resolve problems before they impacted the overall procurement. This communications network also was used to gather an independent view of the program that was provided via a monthly status report to the Project Manager (PM). This insight was an invaluable asset to the program according to Army Col. John Burke, Unmanned Aerial Vehicle Systems (UAVS) Project Manager.

Shortly after the TUAV Program Milestone III Decision presentation was held at the Pentagon on Sept. 25, 2002, it was announced that the Army's Shadow TUAV program would be the first Department of Defense UAV program to progress into the production acquisition stage. Given the history of UAV acquisitions, this was considered a welcome announcement.

"DCMA's administrative contract management with the prime contractor and our program office, link the day-to-day government program management with the contractor's ability to perform, saving travel and additional on-site personnel," Burke said. "The inside-the-plant location, long-standing familiarity with the prime contractor's processes, financial management, and sub-contract management allow forecasting of cost and schedule instead of corrective actions. DCMA's national network of contract management offices is able to readily bring government oversight and inspection to sub-contract problems remote from the prime contractor's location."

IOTE and Delivery of Systems

Nearing delivery of the LRIP 1 systems for Initial Operational Test and Evaluation (IOT&E), a specific challenge was anticipated resulting from the lack of flight facilities at the primary point of manufacturing. AAI designs and produces the systems at their Hunt Valley, Md., location and ships them to the Fort Huachuca, Ariz., flight center for system demonstration (functional flight checks) and final acceptance.

The Maryland and Phoenix/Sierra Vista DCMA operations act as one to assure a smooth transition through the acceptance process. The established process provided closed-loop feedback of any system deficiencies that enabled quick implementation of changes in manufacturing or quality assurance methods. DCMA QARs at both locations were called upon to provide near real-time support to meet program needs and keep the project moving forward.

During IOT&E and delivery of systems to combat units, the program entered a new phase requiring operations and maintenance in addition to the ongoing preplanned improvements and ramp-up for full-scale production. DCMA's Administering Contracting Officer (ACO) initiated contractual vehicles to provide component spares and Repair of Repairables (ROR) as the operations tempo increased. These methods were developed via the IPTs to meet program needs in a timely and consistent manner. The program successfully completed IOT&E in April 2002.

Exercising Options for Nine Additional Systems

Delays in IOT&E created the opportunity for breaks in production between LRIP and the Full-Rate Production (FRP) decision. To maintain the production capability and avoid shutdown and restart costs, the program exercised options for nine additional systems over two fiscal years (designated LRIP FY01 and LRIP FY02). This level of production was determined to be sufficient to carry through until a Milestone III decision could be made to progress into FRP.

DCMA used this opportunity to incorporate many lessons-learned from IOT&E and refine its surveillance approach. Where the supplier had demonstrated process maturity and capability, DCMA refocused attention to higher-risk areas. The DCMA ACO also modified the system Contract Line Item Numbers (CLINs) to sub-CLINs for system-level components so that components could be delivered and tested independently from the remainder of the system for the subsequent nine LRIP systems. This allowed flexibility of mixing assets within the systems to support flight testing and deployment.

Call for Independent Review

Also, the UAVS PM requested that DCMA have an Electrical Engineer perform an assessment of the maturity of the production engineering and quality control processes involved in the procurement of the Remote Video Terminal Rugged Field Computer to curb subassembly impact on cost, schedule, and technical performance that might threaten project success. DCMA quickly coordinated with its sister office in Pittsburgh to complete this task. With the insight of the in-plant QAR at the subcontractor facility assisting the engineer, an independent view of the production engineering and quality control processes was provided to the UAVS PM in just 16 calendar days, which included a conclusion and recommendation.

Preparing for Milestone III

After the deliveries of the LRIP FY01 systems, in preparation for the Milestone III decision, a series of Production Readiness Reviews (PRRs) were scheduled.

Throughout its support of the Tactical Unmanned Aerial Vehicle program, the Defense Contract Management Agency has served as a bridge between the customer and suppliers; the Agency's intimate knowledge of the industrial base enables it to deliver great customer service.

From April 2002 to August 2002, reviews were held at each of the major subcontractors' facilities. Fact-finding sessions were also held at the prime contractor's facility. During each review, DCMA participated along with program office staff and provided insight and professional expertise based on their knowledge of that vendor's processes and their risk associated with cost, schedule, and technical performance. These reviews culminated with the formal PRR held in August 2002 at AAI Corp. DCMA participation included PST members as well as the local DCMA deputy commander. The review was successful and received the endorsement of the local DCMA commander.

Concurrent with the PRR activities, the team entered into an alpha contracting process in preparation for awarding the FRP contract. Continuing in the IPT tradition, the Statement of Work (SOW), specification changes, schedules for performance-based payments, and engineering and logistical support SOWs were developed. The team members used this opportunity to apply lessons-learned from the earlier program phases to provide a smooth transition from LRIP to FRP.

Milestone III Decision

The TUAV Program Milestone III Decision presentation was held at the Pentagon on Sept. 25, 2002. Attesting to the spirit of teamwork on the project, the DCMA Maryland commander and PI were requested to participate by the PM. During the review, DCMA's contributions to the success of the project were noted. Shortly after the presentation, it was announced that the Army's Shadow TUAV program would be the first Department of Defense UAV program to progress into the production acquisition stage. Given the history of UAV acquisitions, this was considered a welcome announcement.

FRP Contract Awarded

The FRP contract was awarded to AAI Corp. on Dec. 27, 2002, exactly 36 months to the day after the exercise of the first LRIP CLIN. DCMA continues its responsibility to ensure its industry partners fulfill their contractual obligations, and continues to lead the way to efficient and effective business processes. Throughout its support of the TUAV program, the agency has served as a bridge between the customer and suppliers; the Agency's intimate knowledge of the industrial base enables it to deliver great customer service. DCMA enables the warfighter to win!

Editor's Note: The author welcomes questions or comments on this article. Contact James.Harrington@dcma.mil.